

July 8, 1958

Dr. Efraim Racker  
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Dear Efraim:

I noticed in this week's Science the adoption of a standard unit for enzyme activity by your sub-committee. This seems to me an urgent necessity long overdue.

I would only make the following small comments: one, that you try to contrive an easy name for this unit which will be immediately understood as referring to your standards, a name which should be readily abbreviated. Two, it should not be difficult to cope with polymeric substrates by specifying that in these cases the unit should be based on the number of active groups which are split or converted. In fact, I would believe that this would be a sounder basis than the number of moles of substrate utilized in any instance where a substrate molecule has more than one reactive site, for example oxidizable phenols. Where you have successive oxidation of the same molecule by the same enzyme or by an unresolved enzyme complex I should think that a definition based on the whole molecule might be confusing. If you confine your attention to the number of unit operations catalyzed by the enzyme this difficulty should disappear. In any case, I would suppose that an author would have to specify what he is using as his term of reference if there is any possible ambiguity. These ambiguities are most likely to arise in discussing the unitage of enzyme complexes rather than purified preparations, but I think the notation would be increased if the convention included both cases.

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Yours sincerely,

Joshua Lederberg  
Professor of Medical Genetics

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